Appl. No. 09/943,982 Amdt. sent March 25, 2005 Reply to Office Action of December 30, 2004

## **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

## **Listing of Claims:**

1	1. (Currently amended): A backup processing method for backing up data to
2	be used by a data-processing computer system, the method comprising the steps of:
3	selecting resources in a usable state from a plurality of resources necessary for
4	backing up data, the data to be used by the data-processing computer system;
5	selecting switches in a usable state from a plurality of switches necessary for
6	forming routes among the selected resources;
7	determining which of the selected resources and selected routes are secure; and
8	securing a one group of the selected resources and selected routes as a first path
9	for backup and another one group of the selected resources and selected routes as a second path;
10	executing backup processing by using secured resources and routes-the first path
11	and a backup instruction command set having a plurality of backup commands, each backup
12	command backing up a different portion of the data, every portion of the data having a
13	corresponding backup command, the backup processing including executing one or more of the
14	backup commands; when the resources and routes necessary for backing up data to be used in
15	data processing by the computer system are secured, to thereby form a plurality of backup
16	subsystems by the selection.
17	detecting if a problem occurs in the first path based on a result of execution of one
18	of the backup commands in the backup instruction command set;
19	changing from the first path to the second path if a problem is detected; and
20	continuing execution of the backup processing by using the second path and
21	executing backup commands in the backup instruction command sets that have not yet been
22	executed.

1	2. (Currently amended): A backup processing method according to claim 1
2	wherein backup processing is executed by using the plurality of resources and routes so secured
3	first or the second path, and when the backup processing has been successfully fully executed b
4	at least one subsystemone or both of the paths, regarding the backup processing as successful.
	3-5. (Canceled)
1	6. (Original): A backup processing method according to claim 2, further
2	including a step of storing information relating to the backup processing of the backed-up data.
1	7. (Original): A backup processing method according to claim 2, further
2	including a step of storing information relating to whether the backup processing of the backed-
3	up data was successfully executed.
1	8. (Original): A backup processing method according to claim 7, wherein
2	data stored relating to the successful execution of the backup processing is used to determine if
3	the data can be restored.
	9-15. (Canceled)
1	16. (New): A backup processing method according to claim 1 further
2	comprising terminating execution of the backup processing if the second path is not secured.
1	17. (New): A computer managing a system which includes a plurality of
2	resources, comprising:
3	a processing unit; and
4	a network interface connectable to the plurality of resources via a network,
5	wherein the processing unit is operable to:
5	select resources in a usable state from the plurality of resources necessary
7	for backing up data stored in a storage system;
3	determine which of the selected resources are secure;

Appl. No. 09/943,982 Amdt. sent March 25, 2005 Reply to Office Action of December 30, 2004

9	secure a first group of the selected resources as a first path and a second
0	group of the selected resources as a second path for backup;
1	initiate first backup processing via the first path by issuing a backup
2	instruction command set via the network interface to the first group of resources, the
3	backup instruction command set having a plurality of backup commands, each backup
4	command effective to backup a portion of the data stored in the storage system, wherein
5	one or more of the backup commands are executed to backup one or more portions of the
.6	data via the first path;
7	detect if a problem occurs in the first path based on a result of execution o
8	one of the backup commands;
9	initiate a change from the first path to the second path if the problem is
20	detected; and
21	initiate second backup processing via the second path by issuing a
22	remaining portion of the backup instruction command set via the network interface to the
23	second group of resources, the remaining portion of the backup instruction command set
24	including those backup commands which had not been previously executed.
1	18. (New): A computer according to claim 17, wherein the processing unit
2	terminates execution of the backup processing if the second path is not secured.
1	19. (New): A computer according to claim 18, wherein backup processing is
2	executed by using the first path or the second path, and if the backup processing has completely
3	executed using either or both of the first path or the second path, then regarding the backup
4	processing as successful.
1	20. (New): A computer according to claim 19 further comprising a memory,
2	wherein the processing unit stores information relating to whether the backup
3	processing of the backed-up data was successfully executed,
4	wherein the processing unit indicates to execute data restore based on the
5	information.

1	21. (New): A computer according to claim 17 further comprising a memory,
2	wherein the data that is backed up is referred to as backed-up data and can be
3	stored in a first storage resource in the first path or in a second storage resource in the second
4	path,
5	wherein the processing unit stores backup information relating to the backup
6	processing of the backed-up data into the memory, the backup information indicating which
7	portions of the backed-up data are stored in the first storage resource and which portions of the
8	backed-up data are stored in the second storage resource,
9	wherein the processing unit initiates restoring of the backed-up data based on the
0	backup information, including performing steps of:
1	accessing the backup information in connection with a first portion of the
2	backed-up data and determining whether the first portion is stored on the first storage
3	resource or on the second storage resource;
4	accessing either the first storage resource or on the second storage
5	resource to obtain the first portion; and
6	repeating the above steps for additional portions of the backed-up data, thereby
7	restoring the data from the backed-up data.
1	22. (New): A system comprising:
2	a storage system;
3	a plurality of library systems;
4	a plurality of copy devices;
5	a plurality of switches which are connectable among the storage system, the
6	plurality of library systems and the plurality of copy devices; and
7	a management computer connectable to the plurality of switches, the storage
8	system, the plurality of library systems and the plurality of copy devices via a network,
9	wherein the management computer is operative to:
0	select library systems in a usable state from the plurality of library system
1	necessary for backing up data stored in the storage system;

Appl. No. 09/943,982 Amdt. sent March 25, 2005 Reply to Office Action of December 30, 2004

1

2

1

2

3

12	select switches in a usable state from the plurality of switches necessary
13	for forming routes from the storage system to the selected library systems, thereby
14	securing a first group of selected library systems and selected switches as a first routes
15	for backup and securing a second group of selected library systems and selected switches
16	as a second route;
17	select a first copy device in a usable state from the plurality of copy
18	devices for the first routes and a second copy device in a usable state from the plurality of
19	copy devices for the second routes; and
20	initiate execution backup processing via the first routes by issuing backup
21	instruction command set including a plurality of backup commands, each backup
22	command indicating to transfer part of the data stored in the storage system to the copy
23	device, when the first and second routes are secured,
24	wherein the first copy device sends portions of data from the storage system to a
25	library system included in the first route in accordance with one or more of the backup
26	commands, and notifies the management computer if an error in the first route is detected,
27	wherein the management computer initiates execution backup processing via the
28	second path by issuing a remaining portion of the backup instruction command set to the second
29	copy device if the management computer receives an error notification from the first copy
30	device,
31	wherein the second copy device sends data from the storage system to a library
32	system included in the second route in accordance with the remaining portion of the backup
33	instruction command set.

- 23. (New): A system according to claim 22, wherein the management computer terminates execution of the backup processing if the second route is not secured.
- 24. (New): A system according to claim 23, wherein backup processing is executed by using the first route or the second route, and when the backup processing has been successfully executed by at least one route, regarding the backup processing as successful.

1	25. (New): A system according to claim 24,
2	wherein the management computer stores information relating to whether the
3	backup processing of the backed-up data was successfully executed,
4	wherein the management computer selects the first route based on the
5	information, indicates the copy device to execute data restore from a library system included in
6	the first route to the storage system via the first route.